STRATEGIC SCHEDULING CHECKUP

Awesome University August 2015

INTRODUCTION

The Ad Astra Strategic Scheduling CheckUp is designed to examine critical institutional data and make strategic recommendations to inform decisions vital to the success of students and the efficient use of resources. This study analyzes instructional capacity and historical course offerings and suggests opportunities for change that can impact the enrollment behavior and success rates of students and the effective use of teaching resources.

The study also gives consideration to the institution's strategic planning, projections for change in student enrollment and expansion or adjustment of teaching facilities.

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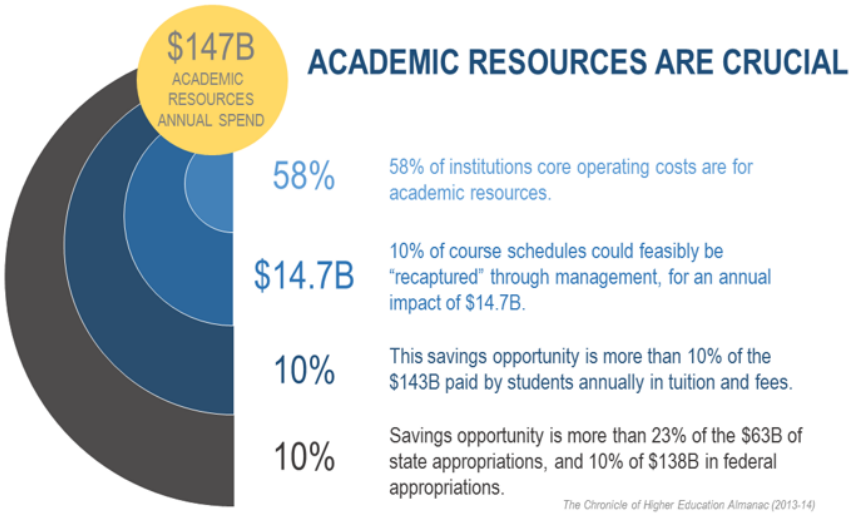

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ABOUT THE HESI

WHAT IS THE HESI?

In their work with more than 800 colleges and universities, Ad Astra has gathered critical space, faculty, and resource data to compile the Higher Education Scheduling Index, or HESI™. The data highlight key performance metrics and national averages to provide insight into institutions concerning their resource allocation and opportunities for improvement. The HESI metrics also provide a context for comparing institutional performance to a sub-set of like (comparable) institutions.

HESI TERMINOLOGY AND METRICS

GENERAL TERMS

Mean Performance—Average Values for each metric among all institutions compared

Like Mean Performance—Average values for each metric among all 'like institutions (e.g., four year public)

Percentile of All Institutions— Percentile ranking of this information in comparison with peers

CLASSROOM CAPACITY METRICS

Classroom Utilization Standard Week—The percentage of hours in a standard scheduling week (as defined by each institution's usage patterns) that a typical classroom is in use

Classroom Utilization Prime Week—The percentage of hours in the primetime subset of a scheduling week (as defined by each institution's usage patterns) that a typical classroom is in use

Prime Ratio—Percentage of hours scheduled during primetime hours (Prime hours divided by total hours)

Seat Fill Utilization (Enrollment)—The percentage of seats in use (based on enrollment) in a classroom when it is scheduled (Enrollment divided by room capacity)

Seat Fill Utilization (Enrollment Cap)—The percentage of seats in use (based on section enrollment caps) in a classroom when it is scheduled (Enrollment cap divided by room capacity)

Off-Grid Utilization—The percentage of scheduling using non-standard meeting patterns (i.e. not on-grid meeting patterns) during primetime hours

Off-Grid Waste—The percentage of capacity wasted by scheduling using non-standard meeting patterns (i.e. not on-grid meeting patterns) during primetime hours

COURSE OFFERING METRICS

Average Enrollment—Average value of the enrollment (census) per section for the term

Average Capacity—Average value of the maximum enrollment per section for the term

Enrollment Ratio—Overall average fill rate for course offerings calculated as census enrollment divided by enrollment caps

Balanced Course Ratio—The percentage of unique courses offered that are balanced with the student need defined as having an Enrollment Ratio between 70% and 95%

Overloaded Course Ratio—The percentage of unique courses offered that are difficult for students to get because their are over-filled (defined as having an Enrollment Ratio greater than 95%)

Under-utilized Course Ratio—The percentage of unique courses offered that are an inefficient use of the faculty resources because they are under-filled (defined as having an Enrollment Ratio less than 70%)

Undefined Course Ratio—The percentage of unique courses offered for which an Enrollment Ratio cannot be calculated because, although the course is being offered, the number of seats offered is zero

Addition Candidates—The percentage of total sections in a schedule that could potentially be added to the schedule based on sufficient demand to justify one or more additional sections

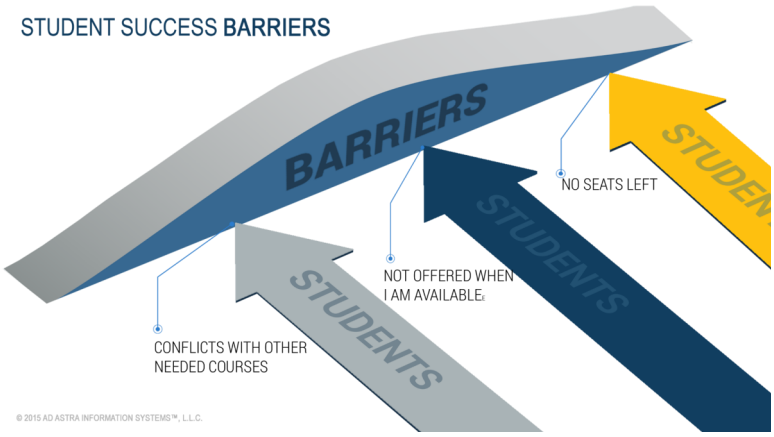
Addition Candidates Offered—The percentage of total addition Candidate sections in a schedule, limited to those courses offered in the analysis term

Reduction Candidates—The percentage of total sections in a schedule that could potentially be removed from the schedule based on insufficient demand to justify these sections

Elimination Candidates—The percentage of total sections in a schedule that could potentially be removed from the schedule based on insufficient demand to justify these courses (Criteria: total enrollment less than 10 and less than 50% enrollment ratio

HESI™

DATABASE OF 114 COLLEGES & UNIVERSITIES



HIGH-LEVEL FINDINGS

HIGHLIGHTS FROM THE HIGHER EDUCATION SCHEDULING INDEX REPORT

Below is a breakdown of Awesome University's Fall 2014 benchmarks against the 17 HESI indices. The University is compared to the industry mean and like institutions (four-year public). Finally, the University is given a percentile ranking placing performance relative to all institutions in the HESI for each metric.

Course Access	Awesome U Findings	Potential Goal	HESI Mean	HESI Like Mean	Percentile
Off-Grid Waste	18%	10%	15%	13%	29%
Overloaded Course Ratio	26%	10%	26%	27%	51%
Addition Candidates Offered	1%	1%	5%	5%	80%

Resource Efficiency	Awesome U Findings	Potential Goal	HESI Mean	HESI Like Mean	Percentile
Enrollment Ratio	81%	85%	77%	74%	59%
Classroom Utilization	51%	60%	47%	51%	61%
Seat Fill (Enroll)	72%	75%	62%	62%	90%

Other	Awesome U Findings	Potential Goal	HESII Mean	HESI Like Mean	Percentile
Average Enrollment	33	35	23	26	89%
Average Enrollment Cap	41	N/A	29	33	89%
Balanced Course Ratio	42%	50%	32%	29%	89%
Underutilized Course Ratio	32%	30%	41%	44%	70%
Reduction Candidates	6%	5%	11%	12%	81%
Elimination Candidates	2%	2%	8%	11%	94%
Primetime Classroom Utilization	60%	N/A	69%	69%	19%
Prime Ratio	83%	50%	58%	62%	2%
Off-Grid Utilization	55%	30%	41%	26%	24%
Standard Week Hours	50	N/A	65	64	8%
Primetime Hours	35	N/A	26	29	94%

RECOMMENDATIONS

LEVERAGE THE STRATEGIC SCHEDULING TEAM

A course schedule is arguably the most important asset of any institution. The schedule is the intersection of students, faculty, and real estate - the three most valuable components of an academic institution.

While most institutions do not have a formal Strategic Scheduling Team ("SST"), we strongly recommend that one be assembled. The formation of a SST is a vital step in building schedules that meet students' needs, while efficiently allocating valuable academic resources.

The SST should serve as "proxy analysts" for the academic units. These representatives ensure the entire schedule is reviewed thoroughly and the schedule meets the needs of the entire institution. Recommended changes made by the SST should be documented and communicated to each academic unit that is effected. Schedule recommendations should be vetted based upon the institution's needs, goals, and priorities.

Establishing new scheduling processes and policies can be a very challenging task. It is absolutely critical that the senior leaders from the institution achieve buy-in from all levels of the organization.

Awesome University should form a SST consisting of representatives from the Provost's Office, the Registrar's Office, Information Technology and the Academic Units. This team should, ideally, have 7-10 members .

The SST should plan to assemble approximately one hour per month. Consulting deliverables and meeting frequency will depend on the institutional goals.

CREATE OBJECTIVE POLICIES

Create objective policies to ensure effective scheduling from the many academic units involved in the scheduling process. Policies should have the following attributes and benefits:

- A focus on equity that minimizes the common phenomena of effective, efficient academic units subsidizing other academic units.
- Objectivity resulting from the analysis of prioritized findings. Policy implementations often fail because they are either too hard to measure/enforce or they are based on a generic but not necessarily applicable set of best practices. For example, a goal to improve capacity and course access by staying on a prime-time meeting pattern grid, policy could be focused directly on adherence to the grid and minimizing capacity waste from off-grid scheduling.
- Prioritization from alignment to the most important goals. Policy should not be implemented where it is not needed or where there is not an institutional priority.

COURSE OFFERING FINDINGS
(UNDERGRAD, FALL 2014 TERM)

FINDING #1:

There are very few "Addition Candidates" (additional sections statistically needed to be added to meet student demand)

Sections needed, but not offered amount to only 1% of existing schedules, as compared to a 5% Average industry average (82nd percentile)

The Course Availability Group has been true to its mission in making sure that most courses have sufficient seats to meet student need

Opportunity:

Continue to emphasize the effective work of the Course Availability Group with an emphasis on courses required for degree completion

FINDING #2:

Off-Grid scheduling and related waste is worse than average, infringing on students' ability to get conflict-free schedules

Overall, utilization of the 235 labs is moderate – 36% v. 56% in classrooms (which we expected)

There is also little difference in primetime (40%) v. standard week (36%) utilization (very little primetime compression)

Opportunity:

Renovation and/or new construction to add 3-5 targeted labs in the most bottlenecked lab types scheduling to support future enrollment growth needs

FINDING #3:

Allocation of faculty is relatively efficient

The overall Enrollment Ratio (census enrollment to enrollment caps) is 81%, compared to the industry average of 77% (58th percentile

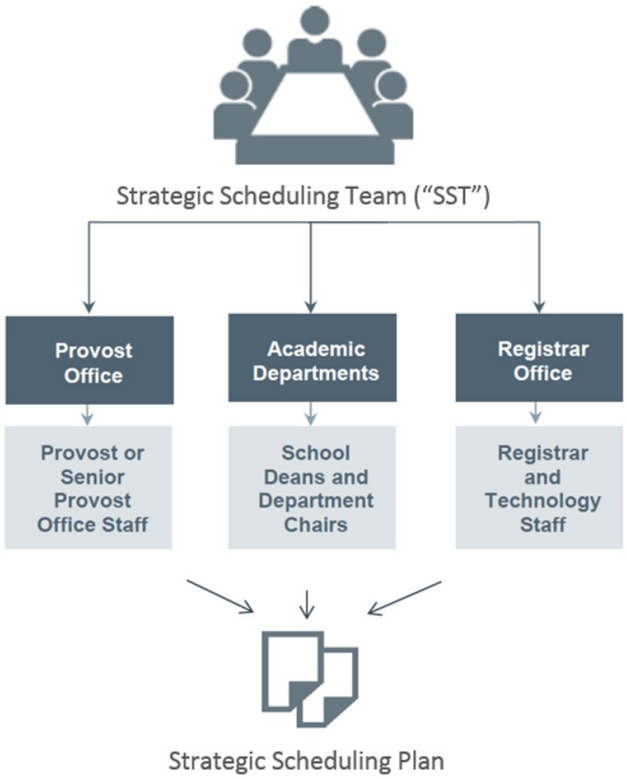
Average enrollments of 33 and enrollment caps of 41 are both well above industry and like institution averages

Sections that are statistically not needed are relatively low, compared to industry averages

- Sections not needed from courses with multiple offerings in a term make up 6% of the total schedule, compared to 11% on average for the industry (80th percentile)
- Sections potentially not needed from courses with a single offering in a term make up 2% of the total schedule, compared to 8% on average for the industry (93rd percentile)

Opportunity:

Develop a policy capping Reduction and Elimination Candidates for each academic unit to ensure further improvement



SPACE UTILIZATION FINDINGS
(FALL 2014 TERM)

FINDING #1:

Classroom Utilization is below average

Classrooms are, on average, in use 56% of the hours in Awesome U's standard scheduling week. This is slightly better than the average for four-year public institutions and better than the 47% average for the industry as a whole (this places Awesome University in the 75th percentile)

Awesome U's scheduling week of 50 hours is shorter than the average of 64 hours, placing Awesome U in the 8th percentile

The shorter scheduling week also leads to a high percentage of activities in primetime (83% of total hours). The industry average is 58% and Awesome University is in the 2nd percentile

When assigned, classrooms fill very effectively. On average, 73% of the seats in a room are occupied (based on census enrollment) compared to an industry average of 62%. This places Awesome U in the 93rd percentile on this important finding

When assigned, classrooms fill very effectively. On average, 73% of the seats in a room are occupied (based on census enrollment) compared to an industry average of 62%. This places Awesome U in the 93rd percentile on this important finding

Some bottlenecking is evident in the largest capacity rooms (100+ seats) where the ability to add additional sections is mostly limited to non-primetime meeting patterns

Primetime bottlenecking is not a major issue, given relatively low levels of primetime utilization, 65% compared to an industry average 69% (33rd percentile)

Opportunity:

Consider heavier non-primetime and evening scheduling to support future enrollment growth needs

FINDING #2:

Off-Grid scheduling and related waste is worse than average, infringing on classroom capacity

As referenced above, during primetime, 55% of the hours scheduled fall outside of the “dominant meeting pattern grid” on MWF and TR

18% of Awesome University's classroom capacity is effectively “wasted” through this practice. The industry average 15%, and Awesome University's is the 28th percentile

Opportunity:

Consider heavier non-primetime and evening scheduling to support future enrollment growth needs

FINDING #3:

Certain Labs are bottlenecked, while overall lab utilization is moderate

Overall, utilization of the 235 labs is moderate – 36% v. 56% in classrooms (which we expected)

There is also little difference in primetime (40%) v. standard week (36%) utilization (very little primetime compression)

10 of the 65 distinct lab types have high utilization

- 4 lab types and 5 total rooms over 60% (Lab - Mechanical Engineering – 2 rooms averaging 77% utilization, Lab - Chemistry Computer Lab – 1 room at 65%, Lab - Industrial and Mfg. Systems Eng. and Mechanical Engineering Manufacturing Lab – 1 room at 64%)
- 7 lab types and 34 rooms between 50 and 60%

Opportunity:

Renovation and/or new construction to add 3-5 targeted labs in the most bottlenecked lab types

APPENDIX CONTENTS

HISTORICAL COURSE OFFERING REPORTS

Detailed Course Offering findings, provided for the Fall 2014 term, can be referenced in the provided report "Historical Course Offering Report" (PDF and Spreadsheet)

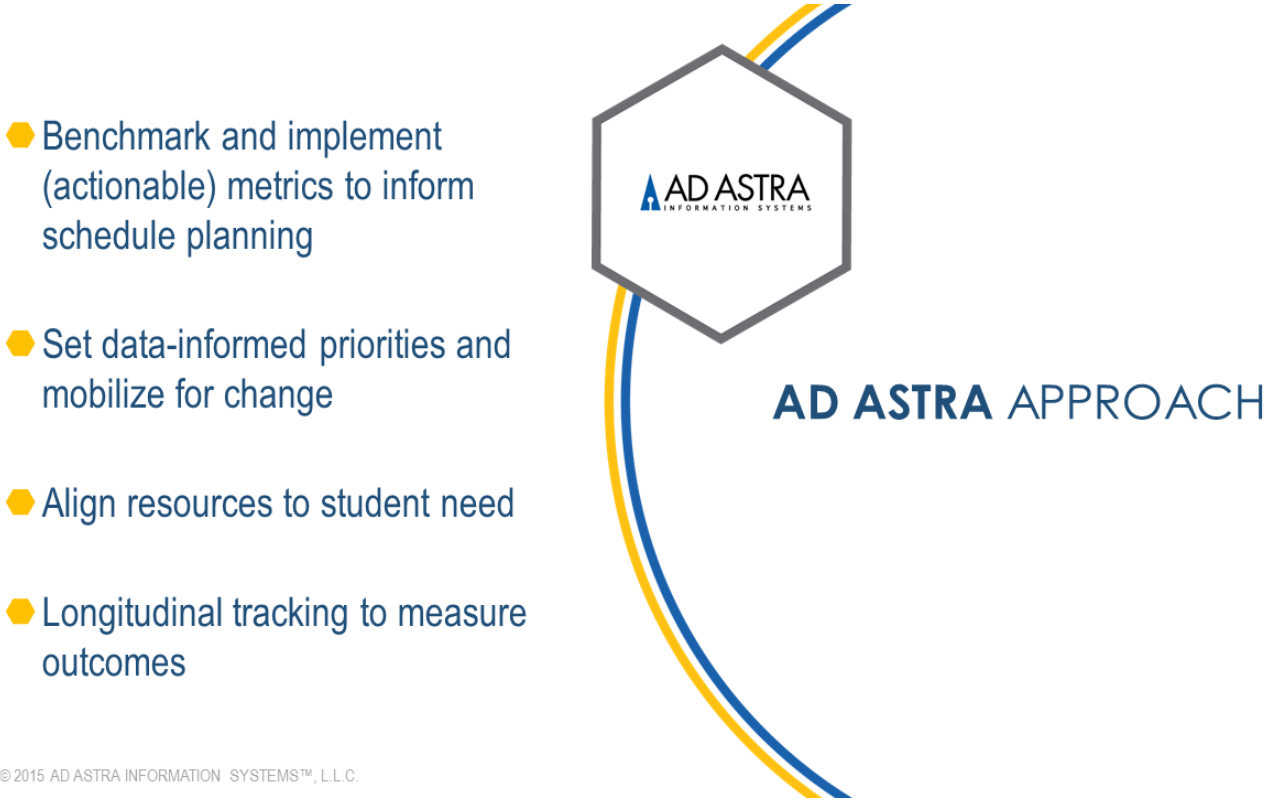
TAB NUMBER	CONTENTS
1: Totals	This tab highlights summary findings in both the baseline (completed, last like) term and analysis (at the time, upcoming academic term). The analysis term corresponds to the name of the spreadsheet (e.g., Fall 15 is the analysis term with Fall 14 being the baseline term). A subset of the findings for undergrad offerings, which are the focus of this project, are listed in the tab as well.
2: By Level	This tab breaks out findings by course level, both in the baseline and analysis terms
3: Additional Findings	This tab breaks out totals by Sections Offered per Course and Enrollment Ratio Tiers
4: All Data	This tab breaks out findings by each course
5: Addition Candidates	This tab breaks out findings for courses that are Addition Candidates
6: Reduction Candidates	This tab breaks out findings for courses that are Reduction Candidates
7: Elimination Candidates	This tab breaks out findings for courses that are Elimination Candidates
8: Cross-list Clusters	This tab breaks out findings for courses that are typically cross-listed
9: Global Filter	This tab is informational, showing courses filtered out of the findings (e.g., independent studies)
10: Glossary	This tab defines the key terminology in this spreadsheet of course offering findings

APPENDIX CONTENTS

SPACE UTILIZATION/CAPACITY REPORTS

Detailed Space Utilization findings, provided for the Fall 2014 term, can be referenced in provided report, “Capacity Analysis Report”

REPORT NUMBER	CONTENTS
Parameters/Contents	This Report lists out the Parameters used to run the Capacity Analysis along with a description of each report contained in the document
1: Space Utilization by Room Type and Size Categories	This report is the most basic assessment of room hour utilization (the percentage of hours a typical room is in use), broken down by size categories and primetime v. overall scheduling week.
2: Space Utilization by Room Type and Size with Seat Fill	This report is similar to Report 1, but substitutes in seat fill analysis v. primetime utilization. Seat Fill is analyzed based on both actual enrollment and enrollment caps to room size
3: Meeting Pattern Analysis with Utilization and Off-Grid Waste	This report breaks out classroom usage during primetime by meeting pattern, highlighting the extent to which the institution stays on the most heavily used, non-overlapping meeting pattern grid. The key findings of this report are the relative popularity of primetime meeting patterns, the extent of of-grid scheduling, and the resulting capacity impact of off-grid scheduling



SOLUTIONS THAT FIT

Strategic Scheduling CheckUp™ – a customized institutional study and presentation of findings that baseline academic operations by analyzing instructional capacity and course offerings trends. In addition, the Strategic Scheduling CheckUp offers actionable data and a benchmark against the Higher Ed Scheduling Index (HESI™) peer database.

Platinum Analytics™ – a patented course demand analysis system that assesses student course needs and suggests high impact schedule changes to advance student program completion.

Astra Schedule™ – an enterprise class scheduling system that integrates with student information systems to optimize and analyze space utilization, create what-if models, manage rooms for classes, exams, events, resource scheduling and produces custom calendars, workflow and notifications.

Professional Services – a comprehensive analysis utilizing the institution's data, Ad Astra consultants guide educational leaders through a logical process to understand and take action on recommended high-impact changes. The multi-phased approach creates a successful change initiative for campus implementation.